

WE CLAIM:

1. A dynamic magnet system, comprising:
a support structure, and
a plurality of magnets oriented in polar opposition for individual movement relative to said support
5 structure, at least some of said magnets having mutually different properties.
2. The dynamic magnet system of claim 1, said at least some magnets having different magnetic strengths.
3. The dynamic magnet system of claim 2, said at least some magnets having substantially equal sizes.
4. The dynamic magnet system of claim 1, said at least some magnets having different sizes.
5. The dynamic magnet system of claim 4, said at least some magnets having substantially equal unit magnetic strengths.
6. The dynamic magnet system of claim 1, further comprising respective bearings establishing static coefficients of friction between said magnets and said support structure less than 0.02.
7. The dynamic magnet system of claim 1, further comprising ferrofluid bearings between said magnets and said support structure.

8. The dynamic magnet system of claim 7, said ferrofluid having a viscosity less than 10 centipoise.

9. The dynamic magnet system of claim 8, said ferrofluid comprising a light mineral oil medium mixed with isoparaffinic acid.

10. The dynamic magnet system of claim 1, further comprising a conductor oriented with respect to said support structure and magnets so that movement of said magnets induces an electrical signal in said conductor.

11. The dynamic magnet system of claim 10, said conductor comprising at least one coil wound on said support structure, said support structure being nonconductive.

12. The dynamic magnet system of claim 10, further comprising an operating system powered by said signal.

13. The dynamic magnet system of claim 1, further comprises a pair of end magnets limiting the travel of said moving magnets, said end magnets oriented in polar opposition to the nearest respective moving magnet.

14. The dynamic magnet system of claim 1, said magnets having multiple oscillation modes relative to said support structure.

15. The dynamic magnet system of claim 1, said support structure orienting said magnets for movement in a primarily horizontal direction.

16. The dynamic magnet system of claim 1, said magnets oriented for movement along a common axis.

17. The dynamic magnet system of claim 1, said system having a critical angle of displacement for said magnets from a horizontal static position of less than 1 degree.

18. The dynamic magnet system of claim 17, wherein said critical angle is less than 10 minutes.

19. An energy harvester, comprising:

a support structure,

a plurality of magnets oriented in polar opposition to oscillate relative to said support structure in multiple oscillation modes, at least some of said magnets having mutually different properties,

respective bearings establishing static coefficients of friction between said magnets and said support structure less than 0.02, and

a conductor oriented with respect to said support structure and magnets so that oscillation of said magnets in response to a movement of said support structure induces an electrical signal in said conductor.

20. The energy harvester of claim 19, said at least some magnets having different magnetic strengths.

21. The energy harvester of claim 20, said at least some magnets having substantially equal sizes.

22. The energy harvester of claim 19, said at least some magnets having different sizes.

23. The energy harvester of claim 22, said at least some magnets having substantially equal unit magnetic strengths.

24. The energy harvester of claim 19, said bearings comprising a ferrofluid.

25. The energy harvester of claim 24, said ferrofluid having a viscosity less than 10 centipoise.

26. The energy harvester of claim 24, said ferrofluid comprising a light mineral oil medium mixed with isoparaffinic acid.

27. The energy harvester of claim 19, further comprising an operating system powered by said signal.

28. The energy harvester of claim 19, said support structure orienting said magnets for movement in a primarily horizontal direction.

29. An energy harvester, comprising:
a support structure,
a plurality of magnets oriented in polar opposition to oscillate relative to said support structure in
5 multiple oscillation modes, at least some of said magnets
having mutually different properties, and

a conductor oriented with respect to said support structure and magnets so that oscillation of said magnets in response to a movement of said support structure induces an electrical signal in said conductor,

wherein said harvester has a critical angle of displacement for said magnets from a horizontal static position of less than 1 degree.

30. The energy harvester of claim 29, wherein said magnets have different magnetic strengths.

31. The energy harvester of claim 29, wherein said critical angle is less than 10 minutes.

32. The energy harvester of claim 29, further comprising an operating system powered by said signal.

33. A dynamic magnet system, comprising:

a support structure, and

an even number of magnets oriented in polar opposition to individually move relative to said support structure along a common axis, at least some of said magnets having mutually different properties.

34. The dynamic magnet system of claim 33, said at least some magnets having different magnetic strengths.

35. The dynamic magnet system of claim 34, said at least some magnets having substantially equal sizes.

36. The dynamic magnet system of claim 33, said at least some magnets having different sizes.

37. The dynamic magnet system of claim 36, said at least some magnets having substantially equal unit magnetic strengths.

38. The dynamic magnet system of claim 33, further comprising respective bearings establishing static coefficients of friction between said magnets and said support structure less than 0.02.

39. The dynamic magnet system of claim 33, further comprising ferrofluid bearings between said magnets and said support structure.

40. The dynamic magnet system of claim 39, said ferrofluid having a viscosity less than 10 centipoise.

41. The dynamic magnet system of claim 39, said ferrofluid comprising a light mineral oil medium mixed with isoparaffinic acid.

42. The dynamic magnet system of claim 33, further comprising a conductor oriented with respect to said support structure and magnets so that movement of said magnets induces an electrical signal in said conductor.

43. The dynamic magnet system of claim 42, further comprising an operating system powered by said signal.

44. The dynamic magnet system of claim 33, said magnets having multiple oscillation modes relative to said support structure.

45. The dynamic magnet system of claim 33, said support structure orienting said magnets for movement in a primarily horizontal direction.

46. The dynamic magnet system of claim 33, said system having a critical angle of displacement for said magnets from a horizontal static position of less than 1 degree.

47. The dynamic magnet system of claim 46, wherein said critical angle is less than 10 minutes.

48. A dynamic magnet system, comprising:

a support structure,

a plurality of magnets oriented in polar opposition to move relative to said support structure, at least
5 some of said magnets having mutually different properties, and

respective bearings establishing ultra low static coefficients of friction less than 0.02 between said magnets and said support structure,

10 said support structure orienting said magnets for primarily horizontal movement.

49. The dynamic magnet system of claim 48, said at least some magnets having different magnetic strengths.

50. The dynamic magnet system of claim 49, said at least some magnets having substantially equal sizes.

51. The dynamic magnet system of claim 48, said at least some magnets having different sizes.

52. The dynamic magnet system of claim 51, said at least some magnets having substantially equal unit magnetic strengths.

53. The dynamic magnet system of claim 48, said bearings comprising a ferrofluid.

54. The dynamic magnet system of claim 53, said ferrofluid having a viscosity less than 10 centipoise.

55. The dynamic magnet system of claim 53, said ferrofluid comprising a light mineral oil medium mixed with isoparaffinic acid.

56. The dynamic magnet system of claim 48, further comprising a conductor oriented with respect to said support structure and magnets so that movement of said magnets induces an electrical signal in said conductor.

57. The dynamic magnet system of claim 56, further comprising an operating system powered by said signal.

58. The dynamic magnet system of claim 48, said magnets having multiple oscillation modes relative to said support structure.

59. A dynamic magnet system, comprising:
a support structure, and
a plurality of magnets oriented in polar opposition to move relative to said support structure, at least
5 some of said magnets having mutually different properties,
said support structure orienting said magnets for primarily horizontal movement,
wherein said system has a critical angle of displacement for said magnets from a horizontal static position of less than 1 degree.
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60. The dynamic magnet system of claim 59, wherein said magnets have different magnetic strengths.

61. The dynamic magnet system of claim 59, wherein said critical angle is less than 10 minutes.

62. The dynamic magnet system of claim 59, further comprising a conductor oriented with respect to said support structure and magnets so that movement of said magnets induces an electrical signal in said conductor.

63. The dynamic magnet system of claim 62, further comprising an operating system powered by said signal.

64. The dynamic magnet system of claim 59, said magnets having multiple oscillation modes relative to said support structure.